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VOL. XIX **Air Corps News Letter** NO. 23

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The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

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THE UNITED STATES ARMY, A PIONEER OF PIONEERS

By 2nd Lieut. Ray W. Clifton, Air Corps

THE average layman thinks of the Army in the terms of being an organized body of men armed only for the purpose of war. The present day United States Army is a small, efficient, and effective mobile force which is available for emergencies within the continental limits of the United States, Alaska, Hawaii, the Philippines, Panama, Porto Rico and China. Although the primary purpose of all of the work of the Army is to provide for national defense, it has and does play a large part in the development of the nation. Due to its size and efficiency, it has been able to accomplish tasks which have been too large for ptivate enterprise.

When the Louisiana Purchase was made, very little was known of the land. Captain Meriwether Lewis and Lieutenant William Clark were sent with 4 sergeants, 23 privates, and some Indian guides on the "Lewis and Clark Expedition" to explore this new territory and to bring back the knowledge of its resources. The information obtained was of such great value to the pioneers that Congress rewarded all the men with grants of land and double pay.

Soldiers of the Army went along with the pioneers into this new territory, surveyed the land, blazed trails, built roads, and protected the settlers from the Indians.

Practically every boundary of the United States and most of the State boundaries were surveyed and marked by the Army engineers. They helped construct the Chesapeake and Ohio and the Erie Canals. Many of our lakes have been surveyed by them. Lighthouses were built by the engineers to aid navigation. They have always been active in flood prevention, in the improvement of rivers and harbors, and in the protection and preservation of navigable waters for which are spent a certain portion of the funds which are appropriated by Congress for the War Department.

The Army engineers have built many public buildings in Washington, D.C., such as the Washington Monument, the Library of Congress, the old Post Office Building, the Government Printing Office, the New Municipal Building, the War College, the wings and dome of the United States Capitol, and the old Agricultural Building. They supervised the construction of the Lincoln memorial, and most of the park system of the District of Columbia.

Many of the early railroads, such as the Boston & Albany; New York, New Haven & Hartford; the Northern Central; the Baltimore and Ohio, and others were located, constructed and managed for a time by the Army engineers. Later, they assisted in building the transcontinental railroads. At the request of the Czar of Russia, an Army officer was sent to build a railroad from Petrograd to Moscow.

The Army stimulated the beginnings of the standardization of the manufacture of machinery and the use of interchangeable parts. The results are that nowadays one can get a new part for most any piece of machinery, of which the car is an example.

The tractor industry was greatly augmented by military experimentation in tanks and artillery tractors. So successful were they that tractors have been adopted by agriculture and other occupations.

The Weather Bureau was organized and operated for a time by the Army. The Bureau has recently developed a new method of forecasting weather. In order to accomplish this, airplanes are flown up to 17,000 feet every morning at designated stations throughout the United States for the purpose of carrying the weather instruments. The Air Corps is cooperating with the Weather Bureau by furnishing airplanes and personnel used at many of these stations.

The Lighthouse Service, which is an important aid to ocean traffic, was built up and operated by the Army before civil agencies took it over.

A very rapid expansion in the telegraph system of the nation occurred just after the Civil War, due largely to the work which was done by the Signal Corps during the war. Three thousand miles of telegraph lines were operated in the South by the Corps as late as 1877, which provided the framework for the systems

V-7162, A.C.

now used in that section.

The Army has given aid in many disasters. It rendered aid in the Mississippi flood of 1912, and during the crisis of the flood of 1927 the Air Corps personnel carried, by air, food and medicine day and night. The chaotic conditions which occurred after the San Francisco earthquake of 1906 were brought to order. Then there were the Galveston flood of 1915 and other disasters in which the Army received gratitude and appreciation from the survivors.

The great forests in our national parks have received fire protection from the Army fliers who patrolled, by air, over 100,000 square miles of forest land in 1922.

The Chemical Warfare Service has solved the problem of effective and safe fumigation. The tear gas which is very useful in capturing barricaded criminals and in suppressing riots is another product of this service. It has produced a gas mask that is helpful in protecting miners against the noxious carbon-monoxide gas. The Service aided in the experiments which led to the dusting of crops by airplanes to exterminate the boll weevil and other insect pests. The department is searching continually for methods which will destroy various insects.

Steel products were first demanded and purchased by the Army. The Ordnance Department prescribed the use of nickel steel for army equipment, causing it to be recognized to such an extent that it is now in common use commercially.

Soldiers accompanied the gold seekers to the Alaskan Klondike. The peaceful atmosphere in this territory was due to the regulations which required all newcomers to deposit their firearms with the Army for safe-keeping. The soldiers not only policed but penetrated the wilderness, surveyed the land, projected railroads, and built roads. The Signal Corps established radio stations, built 600 miles of telegraph lines, and connected Alaska with the United States by laying an ocean cable.

The Army has given momentum to the forces of civilization in the Philippines, Hawaii, Cuba, Porto Rico and Panama by building public utilities, stamping out disease, educating the people, promoting the spiritual welfare and protecting them from aggression.

Through the efforts of the Medical Department, much constructive and life-saving work has been done. The hookworm has been about eliminated. The number of deaths in Porto Rico has been decreased to such an extent that the efficiency of the workers has increased 60%. Much relief has been brought to our southern States also.

The discovery by the Medical Department that yellow fever is transmitted from man to man by the Stegomyia mosquito has resulted in the disease being practically eradicated from the Western Hemisphere. Beriberi, one of the most dreaded diseases in the Philippines, has been eliminated. Malaria has been brought under control.

Eliminating yellow fever and controlling malaria made possible the ultimate completion of the Panama Canal without a heavy death toll and under conditions of health similar to those in the United States.

The medical officers have battled other diseases with creditable results. Smallpox took over 7,000 lives during the Civil War, while it took only 14 during the World War. Malaria took 15,000 during the Civil War, while we lost only 25 during the World War from this cause. A research in the United States Army beginning right after the Spanish-American War in connection with vaccination against typhoid fever was successfully completed by medical officers. The results were that one-twentieth of one percent of the total suffered during the World War, as compared with 12% during the Spanish-American War, from this sickness.

At the beginning of the World War, there was no information available as to where materials could be found, who could manufacture them, and how much they would cost. Much confusion and waste followed in mobilizing the industries. Nowadays, Army officers and civilian experts are determining the location of industrial plants, their size, the kind of work they can do, and the price of their products. This mobilization of the industrial resources of the country during peace time is a great service to the nation and to the manufacturers and will result in the elimination of confusion and waste in the event of another war.

Pioneer work has been done by the Army in the educational field by making surveys of the physical, technical, and educational conditions of young men. During the World War it was found that 50% of those examined were physically subnormal; only one-third of the men who thought they possessed technical skill could be rated as journeymen, and nearly 25% were unable to read or write the English language.

The Army has been one of the early pioneers in the development of aviation. Army fliers made the first flight around the world, the first flight from the mainland to Hawaii, were first to fly across the continent in one day, and made the first non-stop flight from coast to coast. The outside loop was successfully accomplished for the first time by an Army officer.

"Blind Flying," which is so vital in the present day air transportation, was developed by the Air Corps. The first blind landing by instruments and without a safety pilot was successfully completed by an Army flier.

Sending messages from airplane to ground by radio originated in the Army. The birth of aerial photography occurred here also.

At the end of the World War, the Army had on hand an excess of "Jennies" and DH airplanes. A number of the military pilots who were discharged purchased the "Jennies" and took them on "barnstorming" tours throughout the nation. This created an interest in aviation, especially among the younger generation. Many DH airplanes were turned over to the Post Office Department to be used on the transcontinental air mail runs. Later, as air mail became more popular, it was deemed necessary to make mail runs at night. This required lighted air routes. The Army fliers helped blaze these routes.

Because it was necessary to carry out military missions at night during the World War, the aeronautical engineers of our Army developed airdrome and airplane lights.

The Air Corps experimental station at Wright Field, Dayton, Ohio, is continually creating new developments in aviation which tends to arouse interest in the profession to the highest degree and stimulate endeavors along similar lines.

From these timely events it can be seen that the United States Army is a pioneer of pioneers and one of the Nation's greatest assets. It takes this intimate part in the development of the nation not to gain admiration and profit for itself but for the common defense and welfare of the people which it serves.

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PURCHASE OF NEW OBSERVATION PLANES

The Secretary of War, Hon. Harry H. Woodring, recently announced the award of a contract to North American Aviation, Inc., Inglewood, Calif., amounting to $3,429,600 for the delivery of a large number of the new North American O-47 Corps and Army Observation airplanes to the Air Corps.

This is a three-place, mid-wing, single engine monoplane with retractable landing gear and tail wheel, and is powered with a Wright "Cyclone" engine developing approximately 850 horsepower. It is equipped with flaps to permit take-off and landing from small emergency airdromes, thereby enabling fast and modern combat airplanes to utilize the types of airdromes which are available to Observation type aircraft serving Corps and Army units.

The O-47 is designed and constructed to perform detailed reconnaissance of the area immediately behind the enemy's front lines and to maintain liaison between higher headquarters and our front line troops. Especial care has been taken to facilitate the work of the observer in securing information of ground activities and promptly transmitting it to the proper headquarters where, due to the promptness by which it has been secured and transmitted, full utilization of the information is possible.

The highly effective streamlining and the efficient utilization of space which characterizes this airplane, together constitute another example of the rapid advance in aeronautical design now being made by American aviation industry.

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SAVING TIME IN AIRPLANE OVERHAUL

In a recent press bulletin issued by the Bureau of Aeronautics, Navy Department, there appears an item relating to a new method employed in overhauling airplanes at the Naval Air Station at Pensacola, Fla., which is quoted below under the belief that it will be of interest to Air Corps personnel, viz:

"For some time in the past it has been the policy at this Station to give top minor overhauls to the fighting planes of Squadron Five. This reconditioning often calls for a coat of dope on wings and fuselage which makes necessary the removal of the wings from the fuselage and their subsequent replacement and realignment. In order to obviate the necessity for removing the wings, a cradle or 'rocking horse' was built out of a few odd pieces of pipe at very little expense. This cradle is somewhat similar to the chassis of a sled in which the runners are bent through 90 degrees at the forward end and then continued straight for a few feet. The plane is fastened securely to the cradle at the plane's gear fitting while it is in a horizontal position. The cradle is then rocked forward; the plane does the first quarter part of an outside loop and rests in a vertical dive position, the weight being borne on bolts which bear on the forward end of the longerons. It is then possible to dope the bottom side of the wings without removing them from the fuselage and, incidentally, it is very handy to work on the bottom side of the fuselage with the plane in a vertical position. The time saved on the first top minor overhaul using the new cradle more than paid for the cost of the material.

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"BAILING OUT"

Aviation slang is often confusing to the layman, as may be noted from the following item in the Navy Press Bulletin:

"One of the Navy Day visitors inquired about a cadet who had jumped in a parachute several days previously and wanted to know if he had been rescued from the water safely. On being told that the cadet had landsafely on dry land, the visitor observed

(Continued on page 5).

PHOTOGRAPHY AND HUNTING IN THE PHILIPPINE ISLANDS
By Capt. J.F. Phillips and Lieut. A.R. Maxwell

WHILE on a recent photographic and inspection trip in the Southern Islands, Captain J. F. Phillips, Lieut. Alfred R. Maxwell, Master Sergeant V.A. Merson and Staff Sergeant G.H. Goodrich, of Nichols Field, enjoyed, or rather survived, an interesting crocodile hunt. The hunt was arranged by Lieut. Santiago Novarro, Philippine Constabulary, stationed at Buluan, Cotabato Province, in the heart of Southern Mindanao. Lieut. Novarro has built a very good landing field and always extends an enthusiastic welcome to pilots flying through. Practically surrounded by a lake, a river, and the extensive Liguasan Marches, this is a crocodile country. Although several hundred thousand skins were shipped from Cotabato in the early thirties, there are many left.

For some weeks the two officers had been boning up on croc hunting and fixing up their rifles. They learned that crocs are caught in many ways - by spearing, harpooning, lassoing, or fishing with live monkeys or dogs as bait. Maxwell was converted to the spearing idea, but Phillips allowed as how he'd stick to his trusty B'ar gun. As it turned out, rifles were useless for hunting them in the water, and spearing them required an expertness in handling one's self in a narrow banca (dugout canoe).

The party started out after dark in three bancas, crewed by two Moros each. The idea was to wedge one's self in the bottom of the banca and hope it didn't capsize. The bow-paddler wore a battery or carbide flashlight on his head, miner fashion, and was equipped with a long bamboo spear with a detachable head secured to the handle with a length of rope. The hunt was conducted mostly among the lotus pads and grasses which line the shores of Lake Buluan for a depth of several hundred yards. The crocs were located only by their eyes, which were above the water and glowed redly in the ray of the flashlight. When an eye was sighted, the stern-paddler paddled quietly up to the croc while the spearman stood poised for action. The croc was supposed to be speared in the neck, dragged to the banca, and killed with an axe-blow on the head.

Unfortunately, although the hunt lasted until near dawn, all the big crocs were elsewhere, and with one exception all of the catches were made by hand. The Moro would drop his spear and neatly snatch the reptile out of the water by its neck. It looked simple. The Moro then lashed the dangerous mouth closed and tied the head to the tail. Altogether, about twenty crocs, ranging in length from one to three feet, were caught. Most of them were sent to Nichols Field alive and distributed. Several remarks were heard about "frog hunting."

The mosquitoes were another story. They appeared to be even larger than the crocs and certainly more numerous and dangerous. The hunters passed through many swarms as thick as rain, which hummed as loud as a frog-chorus. The hunt was a great experience but, remembering the mosquitoes and the cramped bancas, it is doubtful if any of the four will ever return for the "big ones that got away."

Photographic accomplishments on this flight consisted of exposing over 200 oblique negatives. Landing fields, towns and characteristically Philippine subjects in the order named were sought.

Aerial photography in the Philippines is very much a matter of opportunity, due to the habitual cloudiness and the fact that safety precautions require more than one plane to be in every flight over the jungles and water hops. This decreases the mobility which normally characterizes a photo mission. Very early morning is the time of least cloudiness in the interior of the Islands, while along the coast line on-shore winds are the prayer of the photographer, as they usually prevent clouds from forming for at least a short distance inland.

Among the shots were some of the Moro fishing village at Jolo. This is a jungle of shacks built over the water originally by the immigrating Chinese pirates who did not get along amicably with the Moro Datus. That early animosity has disappeared, but the shacks remain - a jumble of bamboo poles and thatch, reached by rickety catwalks of rotting poles laid two or three side by side. Here life is extremely simple, unashamed and olfactory. The three-in-one plan is followed - bathing, garbage and sewage disposal, and fishing being done in the same water under each house. It is regrettable that aerial photographs lack the ability to capture some of the rank smells that pervade the village. Shots were also made of a village of Sea Gypsies built over a large reef off the east coast of Jolo. These villages are semi-permanent and are made by raising their sailing vintas above the sea on bamboo stilts. An entire family lives in one vinta under a nepa roof. There are no rents, but the style can hardly be imagined.

The Floating Islands of Liguasan Marsh in Mindanao were photographed, possibly for the first time. Here decaying lily pads and swamp grass form a fertile soil insecurely based on the matted roots un-

(Continued on page 8).

GRADUATION OF FLIGHT SURGEONS

FIVE medical officers of the Regular Army and one from the Navy graduated on Saturday, November 14, 1936, following the completion of the four months' basic course of instruction at the School of Aviation Medicine, Randolph Field, Texas. These graduates were assigned to stations, as follows:

Captain Stuart A. Cameron, Chanute Field, Rantoul, Ill.

Captain Jasper N. Knox, Rockwell Field, Calif.

Captain Cyril E. McEnany, Kelly Field, Texas.

Captain Carl R. Darnall, Selfridge Field, Mich.

Captain F. Whitney Hall, Fort Leavenworth, Kansas.

Lieut. Thenton D. Boaz, M.C., U.S.Navy, Naval Air Station, Pensacola, Fla.

At the graduating exercises held in the School Building, the class was addressed and presented with diplomas by Colonel Haywood S. Hansell, Medical Corps, the Surgeon of the 8th Corps Area, Fort Sam Houston, Texas. Major G.J. McMurray, the Chaplain at Randolph Field, delivered the invocation and benediction. Colonel A.D. Tuttle, Medical Corps, the Commandant of the School of Aviation Medicine, presided.

Among those present were Brigadier General James E. Chaney, Air Corps, Commanding General of the Air Corps Training Center, Randolph Field; Colonel Arnold N. Krogstad, Air Corps, Commandant of the Air Corps Advanced Flying School, Kelly Field; Colonel Henry W. Harms, Air Corps, Commandant of the Air Corps Primary Flying School, Randolph Field, and Colonel A.P. Clark, Medical Corps, Assistant to the Surgeon, 8th Corps Area, and formerly Commandant of the School of Aviation Medicine.

The course at the School of Aviation Medicine includes instruction in Ophthalmology and Otology, Aviation Medicine, (including Physical Diagnosis and Cardiology, Physiology and Administration), Psychology and Neuropsychiatry. It is of four months' duration and is conducted twice annually, starting July and December of each calendar year. In addition, as a year-round activity, the School conducts an extension (correspondence) course in Aviation Medicine, in which there are now 416 enrollees from all parts of the country. About two years are required to complete this correspondence course, and before a diploma as a Flight Surgeon can be awarded, it must be supplemented by a six weeks' practical course at the School of Aviation Medicine or at its branches at Langley Field, Va., or March Field, Calif. Calif.

The present force on duty at the School now comprises the following officers, also nine enlisted men and seven civilian employees:

Colonel Arnold D. Tuttle, M.C., Commandant.

Major Frank R. Borden, M.C., Assistant Commandant and Director of Extension Courses.

Major Neely C. Mashburn, M.C., Director, Department of Psychology.

Major Charles F. Snell, M.C., Director, Department of Aviation Medicine.

Captain John M. Hargreaves, M.C., Director, Department of Ophthalmology and Otology.

Captain Walter S. Jensen, M.C., Director, Department of Neuropsychiatry.

Captain Charles L. Leedham, M.C., Assistant Director, Department of Aviation Medicine.

Captain Benj. R. Luscomb, M.A.C., Executive Officer and Secretary.

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AID BY AIR TO STRANDED ARTILLERYMEN

During the last typhoon in the Philippines, a motorized battery of Field Artillery from Fort Stotsenburg, returning home from a field trip, was marooned on a sand bar in the middle of the Bamban River when half way across. A sudden rise of water and a new channel cut behind them prevented their continuing across the ford or retracing their path to higher ground. During the two days of their isolation, Lieuts. Paul B. Wurtsmith and William M. Morgan, Air Corps, of the 3rd Pursuit Squadron, Clark Field, P.I., made several flights to the sand bar and dropped food and medical supplies to the Artillerymen.

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ACTIVITIES AT THE FAIRFIELD AIR DEPOT

The month of October saw considerable activity at the Fairfield Air Depot. The production figures at the end of the month showed ten airplanes and sixty-six motors had received major overhaul. Nineteen PB-1A airplanes from Selfridge Field are being equipped with the new oil dilution system preparatory to taking part in this winter's maneuvers. The first of these has already been completed.

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"BAILING OUT"

(Continued from Page 3).

that she was sure that he had landed in the bay for the reason that she had read in the paper that the cadet had 'bailed out.'"

17TH ATTACK GROUP IN FIELD MANEUVERS

For the second consecutive year, March Field dispatched its 17th Attack Group to Bakersfield, Calif., for its annual fall maneuvers. Under the direction of the Seventeenth's new commandor, Lieut. Colonel Carlyle H. Wash, individual squadrons of the Group have occupied the Bakersfield camp site, located at the Kern County Airport, since the middle of October.

Preceding the Group maneuvers, held during the week November 4 to 10, the field was occupied for successive weeks by the 34th and 73rd Attack Squadrons, respectively, 1st Lieut. Nathan Bedford Forrest commanding the 34th, and Major L. C. Mallory, the 73rd. Upon completion of the Group maneuvers, the 95th Attack Squadron, commanded by 1st Lieut. Ernest H. Lawson, remained for a week's operations to complete the field requirements for the entire Group.

For the first time since the arrival of the new A-17 Attack planes, the entire Group cooperated in the tactical machine gun and bombing missions directed against the Lake Muroc target areas, particular attention being focussed on light bombing.

The News Letter Correspondent states that "the conspicuous efforts on the part of the good citizens of Bakersfield to make our 'war' a pleasant one obviously stirred a profound satisfaction in the hearts of our seasoned campaigners as they viewed the newly installed and permanent conveniences on every hand. Hot and cold showers, convenient and modern toilet facilities, tent sites wired for electricity and supplied with gas were among the numerous novelties designed to take the sting from our annual brush with the elements. Life in the open, however, is never without its share of hardships and privations.

In this instance, the Group's collective ear was constantly subjected to a clamor and din that simulated perfectly the harrying pandemonium characteristic of World War hostilities - the disturbance arising from a hundred conflicting radio programs that poured from a hundred loud speakers to engulf the camp in a veritable inundation of discord. Still, a soldier is a soldier and one must expect such things when 'roughing' it."

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To date, Randolph Field has received a total of 69 new Training planes since delivery began last April. Of this number, 19 are BT-8 (Seversky); 28 BT-9 (North American) and 22 PT-13 (Stearman). All of these new types of planes are now being used in connection with student training. So far, no difficulty has been encountered in connection with their use as a training plane.

2ND BOMBARDMENT GROUP IN JOINT MANEUVERS

The recent joint maneuvers utilizing the fighting forces of both Army and Navy, held off the Virginia-Carolina coast, which precipitated national interest, was actively participated in by the 2nd Bombardment Group, GHQ Air Force. The use of the Air Corps Reconnaissance and Bombardment organizations in coast defense tactics was a unique and highly enlightening experience for all officers and enlisted personnel concerned. Daily missions were flown out over the ocean for distances varying from 50 to 125 miles, which flights culminated with the bombing of targets towed on the surface by naval vessels. Valuable lessons in reconnaissance, communications, bombing and formation over water operations and navigation were chief among the advantages accruing from the maneuvers. The services of every member of the Group were utilized during the cooperative exercises, and it was generally agreed that these particular maneuvers were the most interesting and informative that the Group has ever participated in.

During the course of the exercises, the 2nd Bombardment Group (less 20th Bombardment Squadron, with 99th Bombardment Squadron attached) dropped a total of 108 type MK-1 and 135 type T-1 bombs, 100-pound weight; also, 410 type MK-1, 300-pound bombs. The maneuvers, especially the bombing of moving surface targets, and the degree of accuracy maintained throughout the exercises is still a source of pride to all concerned.

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THE A-17 VERSUS THE A-8 ATTACK PLANE

The Correspondent of the 37th Attack Squadron, Langley Field, Va., states that not long ago a file of Unsatisfactory Performance Reports on the A-17 airplanes came to that organization for its information. After a perusal of the file, it was practically unanimously decided that the reporting officers should have been assigned a flock of A-8's previous to the A-17's, when most of the minor deficiencies would have seemed like luxuries.

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FAST GOING FOR NEW TRANSPORT PLANE

The new Douglas C-33 Transport plane assigned to the Fairfield, Ohio, Air Depot established on November 14th what is believed to be a record run for transport planes between Patterson Field and Bolling Field, D.C.

Aided by a strong tail wind, and piloted by Privates Treweek and Davis, with Lieut. Colonel John G. Colgan and Private Wood as passengers, the trip was made in one hour and forty minutes, an average of nearly 240 miles per hour.

V-7162, A.C.

LONGER TRAINING IN BT-2'S

According to the publication THE TEE, published by the Flying Cadet Battalion at the Air Corps Primary Flying School, Randolph Field, Texas, Primary Stage students will probably be given a longer period of transition time in the BT-2B planes than that received by the July class, before passing on on to the Basic Stage and the faster and more powerful "8's" and "9's". The above is contingent upon weather conditions.

The item in THE TEE is to the effect that "the report is that this time may be extended to include two or three weeks, and it is expected that the increase of experience in the larger ships will have a very definite value when work on the Basic Stage has begun. Should prevailing bad weather delay flying operations during the more elementary phases, however, this amount of transition time will necessarily be shortened due to the necessity of accomplishing the prescribed training in the stipulated time.

The program of instruction for the class of October on A Stage is expected to be on much the same order as that given the preceeding classes, and will occupy approximately the same periods of time.

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SELFRIDGE FIELD PILOTS JOIN P.A.A.

Lieut. D.S. Dunlap, Air Reserve, and Flying Cadet B.E. Michael, Air Corps, will leave Selfridge Field to accept positions with the Pan American Airways. Lieut. Dunlap will report for duty at Brownsville, Texas. Cadet Michael is to be stationed at Miami. For a period of three years, these men will be rated "Apprentice Pilots." During this time they will be students in the Pan American schools. Only after qualifying as Radio Operators, Airplane Mechanics and studying varied subjects will they be allowed to take the examination for the "Junior Pilot" rating.

According to the bi-monthly publication of the Pan American Airways, there are now based at Miami a total of 27 young pilots-in-training, known as apprentice pilots. These men, all college graduates, have also finished in Navy and Army flying schools. They came from home towns scattered throughout the country.

Ten of the 27 students, above mentioned, are graduates of the Air Corps Training Center and Air Corps Reserve officers, viz: J.C. Britton, E.H. Hale, C.V. George, Horace Brock, C.A. Goyette, F.P. Glen, J.E. Anderson, D.C. Pearsen, W.J. Garrison and J.M. McLeod.

INSTRUCTORS AT ADVANCED FLYING SCHOOL

The following-named Air Corps officers have been designated as instructors at the Advanced Flying School, Kelly Field, Texas, for Class No. 27-B, October 15, 1936, to March 1, 1937:

FLYING TRAINING

Director

Major Robert D. Knapp

Attack Section

Captain Glen C. Jamison (Chief)
Captain Clifford P. Bradley
1st Lieut. John H. Ives*
2nd Lieut. Clarence M. Sartain*

Bombardment Section

Major Robert T. Cronau (Chief)
Captain James M. Fitzmaurice
Captain Walter G. Bryte
1st Lieut. Troup Miller, Jr.*
1st Lieut. Edward J. Timberlake, Jr.
1st Lieut. Edgar R. Todd

Observation Section

Captain Otto P. Weyland (Chief)
Captain Russell E. Randall
1st Lieut. Samuel E. Anderson
1st Lieut. August W. Kissner

Pursuit Section

Captain Clyde K. Rich (Chief)
1st Lieut. Jerald W. McCoy
1st Lieut. John H. Bundy*
2nd Lieut. Marvin F. Stalder

*Temporary duty ACPFS, Randolph Field.

GROUND SCHOOL

Director

Captain Clarence E. Crumrine.

Subjects

Aerial Photography - Captain James M. Fitzmaurice.
Attack Aviation - Captain Glen C.Jamison.
Bombardment Aviation - Major Robert T. Cronau.
Bomb Racks, Bombs and Explosives, Bomb Sights, Trap Shooting - 1st Lieut. William L. Kennedy.
Code Practice - Captain Ralph E. Holmes.
Combat Orders, Squadron Duties of Junior Officers, War Planning Principles - Captain Clarence E. Crumrine.
Cooperation with Artillery - Captain Russell E. Randall.
Infantry Missions - 1st Lieut. Samuel E. Anderson.
Military Organization - 1st Lieut. Roy D. Butler.
Observation Aviation - Captain Otto P. Weyland.
Pursuit Aviation - Captain Clyde K. Rich.
Reconnaissance - 1st Lieut. August W. Kissner.
Signal Communications - Captain Hobart R. Yeager.

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During the month of October the Engineering Department of the San Antonio Air Depot overhauled 20 airplanes and 91 engines and repaired 11 planes, 23 engines.

ILLINOIS NATIONAL GUARD AVIATION ACTIVITIES

By 1st Lieut. Monro MacCloskey, Adjutant
33rd Division Aviation, Ill. N.G.

ONE of our junior officers, Lieut. J.P. Dunne, returned early this month after completing a nine weeks' course at the Motor Transport School given at Fort Holabird, Maryland. Lieut. Dunne is the Transportation Officer of our organization, and we are now expecting great things of him as a result of his recent learning.

We lost Staff Sergeant George Miller for the next several months to the Aircraft Armament Course at the Air Corps Technical School. Sergeant Miller has been on the permanent detail at Chicago for several years. Approximately 50% of this permanent detail will be graduates of the Air Corps Technical School when Sergeant Miller has completed his course. It is planned that before long all the men of this detail will have completed the various courses at the Air Corps Technical School.

At our last weekly drill we had as one of our guests Colonel Phil Love, the Division Air Officer of the Missouri National Guard. Colonel Love pointed out that his unit was planning the same schedule as we have - namely, that of the officers gathering for dinner and having their officers' meetings prior to the actual Drill. These meetings have proved of great benefit. During the past month, our Engineering Officer, Captain Newhall, has given us some skull practice, and most of us found ourselves lacking in some important phases in the handling of the airplane motor. We have been holding these weekly meetings for the past couple of years, and they are a source of entertainment as well as instruction to all of us.

Lieut. Casey who, when not flying airplanes, is the Superintendent of the Municipal Airport, gives us some interesting statistics with reference to the completion of his so-called "rock garden":

"W.P.A. PROJECT 1097
CHICAGO MUNICIPAL AIRPORT

Early in 1935 work was started on laying out the plans for the improvements at the airport by the airport personnel with the assistance of City engineers and plans completed in September. The plans were submitted and approved, and work started on November 12, 1935.

The plans called for a new sewerage system, widening and extending the present concrete ramp, straightening out, widening to uniform width of 175' and paving of all runways with macadam asphalt, with a concrete curbing.

The total amount of the improvements as set up in the project amounted to approximately $2,134,000.00.

All sewerage work is now completed.

Paving of runways is now about 80% completed.

The concrete ramp has been widened along the East and South edges of the field, and work is now in progress in extending the ramp along the South and West edges of the field.

A complete new runway lighting system has been installed and is now in operation."

Incidentally, the sewerage work calls for about 10 miles of pipe. The concrete work consists of 29,982 square yards, or 4,497,300 pounds, and the asphalt used consisted of 90,276,000 pounds of stone and 4,728,252 pounds of asphalt. Needless to say, the condition of the "rock garden" has been a mental hazard, especially at night, for all visiting pilots, and we will soon cheer when the work is completed.

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IMPROVEMENTS AT FAIRFIELD AIR DEPOT

Under the direction of Major Ralph B. Walker, Chief Engineering Officer at Patterson Field, the Engineering Shops have undergone modification that has greatly increased production along the motor assembly line, and increased facilities for final assembly of airplanes and engines. The motor test stand is to be removed to a building at the far end of the post, thereby eliminating considerable noise which has heretofore been a great inconvenience to the Engineering Shops.

The insulated ceiling and the steam heating plant in the new steel hangar have already proven to be an improvement over the old wooden hangar during the cold weather. It is large enough to accommodate all the airplanes for final inspection and test flight plus the final paint shop, and the work can be carried on under ideal conditions in this new building.

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Photography and Hunting in Philippines

(Continued from Page 4)

derneath. The whole mass moves here and there propelled by the wind. This may be as much as 2 to 3 miles per day, according to authentic reports. Some of the larger islands are several acres in extent, and solitude loving Moros build shacks and grow their crops thereon. Interesting problems of crop ownership arise from the roving nature of these Floating Islands, settled by a sharp-edged kriss or the Philippine Constabulary.

Weeks could be spent among the Southern Islands of the Philippines doing interesting oblique aerial photography, not to mention the verticals needed for map making in the regions still marked "Unexplored" on the best maps yet made.

V-7162, A.C.

FLYING IN PANAMA

By 1st Lieut. Dwight Divine, Air Corps

PANAMA is not precisely a flyer's paradise. As a matter of fact, worse conditions for cross-country flying are hard to find. At first thought, this would seem to imply that the weather is the worst in the world, but the reverse is more nearly correct. The terrain of the country, the dense vegetation and the scarcity of population are primarily responsible for the hazards that do exist.

The Isthmus of Panama, lying nearly east and west, is split by a range of mountains running from one end of the Isthmus to the other. While not of extreme height, the highest peak reaching only 11,000 feet, they are still a source of annoyance because of the frequent low ceilings. Naturally, such a condition necessitates low flying, with the resulting impossibility of using a parachute in case of trouble.

However, the majority of cross-country flying in Panama is along the coasts. There are few level areas which might be called coastal plains, except far to the west along the southern coast. Here are large, level fields, with fine turf; fields capable of being made into first class airdromes. But this small stretch has apparently preempted all the flat country in Panama. Elsewhere the coasts present either a palisade of rocky cliffs, or narrow beaches with dense tropical vegetation to the very edge of the water. The area between mountains and coasts is for the most part cut up by rocky gullies and ravines, the whole well dotted with scrub growth.

The weather conditions are peculiar. During the dry season, which is officially four months, from about December 15 to April 15, flying conditions are very good. During this time there is little, if any, rain, either by day or by night. The rainy, or "moldy" season, however, is very much different. The rainfall is heavy - about an average of 100 inches per year. This rain is usually in the form of showers which, although scattered, are very severe. Occasionally, a more or less general storm will occur which is impossible to go around. In the States, of course, the answer would be instrument flying, but in Panama there are numerous reasons why this is not practicable. First, there are almost no weather stations, and that makes it impossible to obtain wind aloft reports; second, there is but one radio beacon - at France Field; third, rain storms appear with great rapidity, apparently from nowhere, and when starting for a given point it is highly probable that a big black storm will get there before you do. Since, however, these storms are usually of short duration, it is eventually possible to land at the objective.

As for fog, snow, hail and ice, they do not deserve a second thought. True fog of any intensity is extremely rare. There is no record of either snow or ice, and hail has been observed only two or three times in the past twenty years. Severe storms do not occur, that is, a high wind never accompanies a rain, and it is extremely seldom that any high winds appear.

Cross-country equipment carried in all planes consists of everything but the kitchen stove, as the old saying goes. Due to the great stretches of uninhabited jungle, a pilot forced down is faced with the prospect of quite an extended camping trip. If he is so fortunate as to find his plane, after bailing out, he will have water, a gun, ammunition, emergency rations, a compass, a head net, quinine, iodine, a bolo, a map, and a beautiful prospect.

A later development, which has been in use at Albrook and France Fields for about a year, is the parachute jungle emergency kit. This consists of a container for all of the articles mentioned in the preceding paragraph, and it is designed as part of the parachute seat. Thus, the pilot is assured of something to start with even though the ship cannot be found. Unfortunately, this kit, while very compact, is bulky enough in the case of a tall P-12 pilot to cause his head to project considerably above the windshield into the slipstream, even with the seat all the way down.

Real practice in navigation is rather scarce. The Isthmus is comparatively small, and after a pilot has flown over it for a few months, he becomes familiar with the whole terrain. It is then easy to fly to almost any point without map or compass, especially since most of the flying is done along the coasts. If any real navigation is to be used, it is necessary to fly a course over some of the worst country imaginable. An old Air Corps proverb down here says that there isn't any place to go in Panama, and when you get there you might as well have stayed home. That isn't so far from the truth. Outside of Panama, Colon and David, there are almost no towns of any size. There are a few which have frame and concrete buildings, but the majority consist of native grass and 'dobe houses, with perhaps a stone or concrete church.

One little town on the southern coast is a good example of the isolation of some of these people. Jaque (pronounced hah-kay) is about 175 miles from Panama City by air. Although on the coast, their sole contact with the rest of the world is a small Panamanian trading vessel that docks there once every three months! Of

course, this does not take into account the periodic visits of Army aircraft. A rather amusing incident occurred when the last flight landed at Jaque. The Mayor's right hand man brought out the town's official (and only) alarm clock and requested the correct time. It turned out that the whole town had been 30 minutes slow for some time. They also requested news of the presidential inauguration in Panama, wanting to know if there had been a revolution this time. There hadn't.

It seems strange to reflect that probably eighty percent of these people in this little town have never seen an automobile or a trolley car, and yet an airplane to them is almost commonplace.

Brigadier General George H. Brett, Air Corps, Commander of the 19th Wing, is of the opinion that every pilot should have training on modern types of aircraft. But down here that affords something of a problem, since many of the airplanes on the Isthmus are not of the latest types. The modern planes are the Martin B-10's, and since they are assigned to the Observation squadrons the Pursuiters and Bombers do not ordinarily fly them. Under a schedule now partially completed, however, each pilot will fly five hours and make at least fifteen landings in a B-10. Thus, when he returns to the States, he will not be completely lost. Of course, this flying keeps the B-10's pretty busy, since they are used for this special training in addition to regular tactical use.

It would seem that a few modern training ships, such as the new Seversky Trainers, could be used to great advantage in the Panama Canal Department, since what modern tactical ships we have would then be released for tactical flying only - of which there is plenty to be done.

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AERIAL FREIGHT HANDLING AT FAIRFIELD

The Transport Squadron at the Fairfield Air Depot, Patterson Field, Ohio, commanded by Captain Russell E. Cooper, has received both of their C-33 airplanes, thus giving them a complement of four Transport planes. Due to this increase in the number of airplanes and the increasing amount of freight, the Squadron has found itself confronted with the problem of properly handling shipments. A new system of shipping tickets and way bills is being devised, and it is hoped that a satisfactory method of handling freight shipments will be worked out with the Supply Depot in the near future.

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Lieut. Alva Marsh, Air Reserve, who was on active duty for a brief period with the 37th Attack Squadron, Langley Field, Va., left this organization recently to accept employment with a commercial air line.

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ACTIVITIES OF THE 77TH PURSUIT SQUADRON

The opening days of November found the 77th Pursuit Squadron, Barksdale Field, La., in the field at New Orleans, La., with the Third Wing, working interception problems with the Third Attack Group.

The News Letter Correspondent states that this maneuver will long be remembered as the sandiest in history. "Other reminders that we were in the field," he says, "included mosquitoes, high winds sagging the tents, and cold damp temperatures to keep us sleeping in our flying equipment. Lieut. C.N. Piper, lately from Selfridge Field, suffered from the cold more than any other pilot. He thought it couldn't get cold down south, so didn't take cover.

The rest of the period was devoted to preparation for the Charity Demonstration given at Barksdale Field, November 15th. Lieuts. Piper, Cy Wilson and Dave Desmond made up an acrobatic team that would be hard to beat. They certainly held the attention of the huge crowd as they performed their acrobatic maneuvers while in close formation. The 77th Squadron also furnished six planes and pilots to fly with the composite squadron that flew for the purpose of demonstrating Pursuit maneuvers. The audience especially enjoyed the firing of the Squadron and went away with stiff necks from watching the precision flying of the squadron."

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55TH PURSUIT SQUADRON AT SHUSHAN AIRPORT

November 1st found the 55th Pursuit Squadron, stationed at Barksdale Field, La., in the final stages of annual Fall Maneuvers, encamped with other squadrons of the Third Wing at Shushan Airport, New Orleans, La.

The maneuvers consisted largely of patrol and radio net problems to intercept Attack airplanes simulating enemy forces. The 55th Squadron was most consistently instrumental in apprehending and subduing the opposing forces. Featured on the final day of the encampment was a Wing Review over the city of New Orleans.

Various so called hardships were endured by the squadron personnel in camp because of unusual weather conditions. Rain, high winds and biting cold contributed to discomforts of out of door living and made breaking camp appear as one of the most pleasant tasks of the maneuvers.

Following the return of the 55th to Barksdale Field, its personnel were busily

(Continued on Page 16).

THE 79TH PURSUIT SQUADRON AT NEW ORLEANS
By the News Letter Correspondent

The 79th Pursuit Squadron of Barksdale Field, Shreveport, La., left their home station on the afternoon of October 26th, and as the support echelon of the 20th Pursuit Group we proceeded to New Orleans, via Baton Rouge, landing at Shushan Airport, our base during the maneuvers, at 3:30 p.m.

Shushan Airport, on the southern edge of Lake Ponchartrain, is one of the finest airports in the country. It is built out into the lake, affording perfect approaches to all runways.

The camp site for the officers and men of the Third Wing was on the west end of the field, normally a parking area. This was a fine location until the weather "cooked up" a thirty-mile-an-hour gale from the north, bringing half the lake into the officers' tents. Tent pegs pulled up - tents fell down - clothes got wet so badly some of the pilots of the Attack Group had to move.

Our daily missions took us to several cities in the south, among them Pensacola, Florida; Montgomery, Ala., and Mobile, Ala. For the most part, the Third Attack Group simulated the enemy forces for the 20th Pursuit Group. To show the maneuverability of a group of airplanes on a field such as Shushan, the 34 planes of the 20th Pursuit Group from alert took off individually and cleared the field in four minutes.

The Pursuit Group successfully intercepted and attacked on all patrol missions, but radio failure prevented success on two radio controlled interception missions.

The administration building turned out to be a fine place for a game of bridge or a "bull session" during the evenings. The climax of the evening's activities out at the field was to see that the 9:15 transport got off O.K. Of course, all went to town sooner or later. What with Galatoite's "Trout Marguery," Arnaud's "Shrimp Arnaud" and Kolb's "Weiner Schnitzel," who could blame us?

One of the high lights of the maneuvers was the Hallowe'en party given the officers of the Third Wing by the New Orleans Chamber of Commerce, held in the beautiful administration building at the Shushan Airport, where music, horn-blowing, and dancing held sway until the wee hours of the morning.

Having completed the series of problems required, the Third Wing broke camp on the afternoon of November 5th and returned to our home station, Barksdale Field.

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Three bombers in the 96th Bombardment Squadron, Langley Field, Va., recently qualified as "Expert Aerial Bombers" under the provisions of the new tentative Training Regulations 440-40.

CHANGES AT LONG BEACH MUNICIPAL AIRPORT

The long Beach, Calif., Municipal Airport is undergoing a complete reworking, the only section not being picked up and turned around being the Army Base in the southeast corner. The Navy's Aviation Reserve is moving in alongside the Army on the West, then the Airport Superintendent and, lastly, the civilian operators - all operations being lined up from East to West along the south side of the field. The new runways have been completed and will be officially opened to traffic about December 1st.

The 479th Reserve Squadron is very proud of its home and extends to all its fellow organizations an invitation to drop in and see a set-up that is practically perfect.

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AS OTHERS SEE US.

In a recent issue of that excellent British aeronautical publication, THE AEROPLANE, London, Eng., there appeared the following item:

"WAR MACHINES FROM THE STATES

Last week a story was splashed all over the Press to the effect that the Air Ministry was going to buy fighting machines from America. Few things seem less likely. None denies that the Americans have some very good fighting machines, but they seem to have nothing which compares with the Supermarine Spitfire or the Hawker Hurricane as single-seaters, or the Westland or the Battle as two-seaters.

Apparently the story arose originally because a newspaper man at an aerodrome heard a youthful member of an aircraft family remark casually that when the Air Ministry had asked his elder relative what it could do to get fighting machines quickly, he had retorted humorously,- 'Why don't you buy them from America?'"

Elsewhere in this same issue of THE AEROPLANE, in an article touching on the visit to London of a prominent figure in American aviation - one who some years ago published an aeronautical weekly - the Editor of THE AEROPLANE wrote this paragraph. We quote:

Two years before, in 1922, Curtiss seaplanes had come over here and had carried off the Schneider Trophy. Mr. C.R. Fairey was so much impressed by their performance that he went to the States in 1923 and had bought the British rights in the Curtiss aeroplane designs and in the Curtiss D.12 motor, and in 1924 produced the first of the Fairey Foxes, which set a completely new fashion in European aviation,- a fashion which with variations still carries on to-day. Unquote.

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The News Letter would appreciate contribution of material"regularly and frequently" from Mitchel, March and Moffett Fields, and the Middletown Air Depot.

V-7162, A.C.

Biographies

COLONEL FRANK D. LACKLAND

Colonel Frank D. Lackland, Air Corps, now on duty as Chief of the Field Service Section, Wright Field, Dayton, Ohio, became affiliated with the Air Corps during the World War when, in November, 1917, holding the rank of Captain of Infantry, he was promoted to the rank of Major (temporary) Aviation Section, Signal Corps, and assigned to duty at Kelly Field, Texas.

Born in Farquier County, Va., September 13, 1884, Colonel Lackland attended the public schools of Virginia and Washington, D.C., following which he studied law. For eight years he was a member of the National Guard of the District of Columbia, serving from 1903 to 1911 through various grades from Private to Captain.

Passing the examination for appointment in the Regular Army, he was commissioned a second lieutenant of Infantry on February 11, 1911, and during the succeeding six years served with the 11th, 13th, 31st and 22nd Infantry regiments.

He served a tour of duty in the Philippines at Camp McGrath, performing at various times duty as Post Engineering Officer, Signal Officer, Intelligence Officer and Battalion Quartermaster, and for 2½ years, April, 1915, to November, 1917, he was with an Infantry machine company.

At Kelly Field, Colonel Lackland was Executive Officer and Commanding Officer, Recruiting Regiment and Trades Division, from November, 1917, to April, 1918. Thereafter, until January, 1919, he was Executive Officer, School Director and Commanding Officer of the School of Aerial Gunnery at Selfridge Field, Mich. He commanded Selfridge Field from August, 1918, until January 23, 1919, when he was transferred to Langley Field, Va., where he was Post Commander to May 19, 1919, and Officer in Charge of Recruiting to July, 1919. From July to September, 1919, he performed the duties of Executive Officer and Acting Supply Officer.

Transferred to Ellington Field, Houston, Texas, he commanded the 166th Aero Squadron from September 10th to the 26th, when an injury in an airplane accident confined him to the Walter Reed General Hospital for several months.

On December 18, 1919, Colonel Lackland assumed command of the Aviation Repair Depot at Montgomery, Ala., and he continued on this assignment until October, 1920, when he was detailed as student at the Air Service Engineering School at McCook Field, Dayton, Ohio. Graduating from the Engineering School in September, 1921, he assumed the duty of Air Officer of the 8th Corps Area on November 18, 1921. On September 1, 1922, he assumed command of the San Antonio Air Depot, and he remained on this duty until June 25, 1926, when he assumed command of the 3rd Attack Group at Fort Crockett, Galveston, Texas. Two years later, he was assigned as student at the Air Corps Tactical School at Langley Field, Va., and, following his graduation in June, 1929, he was a student at the Command and General Staff School, Fort Leavenworth, Kansas, for the next two years, following which he assumed command of the 12th Observation Group at Fort Sam Houston, Texas, which organization was subsequently moved to Brooks Field, Texas.

Colonel Lackland commanded the 12th Observation Group and the post of Brooks Field until June, 1934, when he was assigned to duty in the Plans Division, Office of the Chief of the Air Corps, Washington, D.C.

In March, 1935, he was assigned to his present duty as Chief of the Field Service Section, Wright Field.

Colonel Lackland was promoted to 1st Lieutenant, July 1, 1916; to Captain, May 15, 1917; to Major, July 1, 1920; to Lieutenant Colonel, August 1, 1935, and to Colonel (temporary) August 26, 1936. He took flying training both at Kelly Field and at Langley Field, and received the rating of Junior Military Aviator, effective June 24, 1919.

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COLONEL JOHN N. REYNOLDS

Colonel John N. Reynolds, Air Corps, now on duty as Air Officer of the 1st Corps Area, Boston, Mass., was born in Washington, D.C., December 26, 1885, and was educated in the schools of that city.

Appointed a second lieutenant, Coast Artillery Corps, U.S. Army, September 25, 1908, he served for a brief period at Fort DuPont, Del.; at Fort Schuyler, N.Y., from November 8, 1908, to August 30,1910; at Fort Mills, P.I., October 4, 1910, to April 15, 1912; at the Presidio of San Francisco, Calif., May 15 to December 1, 1912; at Fort Monroe, Va., December 31, 1912, to December 1, 1913; at Fort DuPont, Del., January 1, 1914, to January 1,1915, and at Fort Screven, Ga., February 1,1915, to October 20, 1916.

Detailed to the Aviation Section, Signal Corps, Colonel Reynolds was a student at the Signal Corps Aviation School at San Diego, Calif., from October 25, 1916, until May 20, 1917. He received the rating of Junior Military Aviator, effective June 15, 1917. After brief periods of duty with the 1st Aero Squadron at

Columbus, New Mexico, and following his relief from that organization, at Kelly Field, Texas, he departed for duty overseas and arrived in France February 3, 1918. His first assignment overseas was with the 1st Observation Group in command of the 91st Aero Squadron. In August, 1918, he was appointed Commander of the Observation Group, 1st Army, which organization rendered excellent service at St. Mihiel and west of the Meuse. On numerous occasions, Colonel Reynolds took part in visual and photographic reconnaissance missions with his squadron and performed excellent and arduous individual service over the front lines in addition to his work as an efficient executive.

Colonel Reynolds was the recipient of the Distinguished Service Cross and a Bronze Oak Leaf, the respective citations accompanying same being as follows:

"For extraordinary heroism in action in the region of Verdun, France, 10th October 1918.

Major Reynolds proceeded over the enemy lines without benefit of protection planes on a mission of great urgency. He flew about twelve kilometers over the lines when he was suddenly set upon by fourteen hostile planes. He fought them off and succeeded in downing one of the enemy. He continued his flight with his badly damaged plane and concluded his mission."

"For extraordinary heroism in action in the region of Grand Pre, France, 29th October 1918.

While on a mission, Major Reynolds was suddenly set upon by six enemy aircraft. Although in the German territory, without protection and in danger of being cut off in the rear, he entered into combat with the hostile aircraft. He succeeded in shooting down two of the enemy and dispersing the rest of the formation. With his machine severely damaged, he continued until he had completed his mission."

Commending him for his distinguished service, the late General William Mitchell stated:

"Lieutenant Colonel John M. Reynolds, Commanding Officer, Army Observation Group, an officer of the highest type; a man who would never ask a member of his command to execute a mission which he would not perform himself. Admired, respected and beloved by every officer and man serving with his units, he built up an organization of splendid morale and remarkable efficiency. His intense energy, organizing ability, devotion to duty and high ideals, combined with a thorough knowledge of every detail connected with the functions of Army observation squadrons bore splendid fruit throughout the summer operations of the Eighth French Army, and during each offensive of the First American Army from the date of its formation to the cessation of hostilities."

Upon his return to the United States, Colonel Reynolds reported, on January 12, 1919, for duty in the Office of the Director of Military Aeronautics, Washington, D.C. On March 5, 1919, he assumed command of Godman Field, Camp Knox, Ky., and in the following month, on April 23rd, he returned to Washington for duty in the Training and Operations Group, Office of the Director of Military Aeronautics. On August 28, 1919, he reported for duty at Langley Field, Va. From October 4 to October 28, 1919, he participated in the Transcontinental Reliability Test Flight.

Relieved from duty at Langley Field July 9, 1920, where he served in the capacities of Commanding Officer of the post, commander of the 2nd Observation Wing and Post Air Service Officer, Col. Reynolds assumed command of Chanute Field, Rantoul, Ill., on July 23, 1920.

In January and February, 1921, he was on duty as Air Officer of the 8th Corps Area at Fort Sam Houston, Texas, and on February 18th he assumed command of Kelly Field, Texas. On February 3, 1922, he was assigned as Wing Operations Officer at Kelly Field, and on June 21, 1922, he assumed command of the 10th School Group at that station.

Transferred to Langley Field, Va., Colonel Reynolds commanded this post February 15 to March 7, 1923, and was commanding officer of the 2nd Bombardment Group from February 15, 1923, to October 15, 1923, when he was assigned to duty as student at the Air Service Tactical School, Langley Field. His graduation from this school in June, 1924, was followed by another year of duty as a student at the Command and General Staff School, Fort Leavenworth, Kansas, from which he graduated in June, 1925. He was then assigned as Commanding Officer of the 12th Observation Squadron and Second Division, Air Service, at Biggs Field, Fort Bliss, Texas, the station of which was changed to Fort Sam Houston, Texas, in June, 1926.

In January, 1928, Colonel Reynolds was transferred to Mitchel Field, N.Y., and he commanded this post and the 9th Observation Group from January 12th to June 5, 1928, and Post Operations Officer to October 25, 1928. For several months thereafter he was Acting Air Officer of the 5th Corps Area at Columbus, Ohio. Following the completion of a special course of instruction for field officers at the Chemical Warfare School at Edgewood, Md., July-August, 1929, Colonel Reynolds was transferred to Langley Field, where he was Operations Officer, Executive Officer, Acting Commandant of the Tactical School and Commander of the post and of the 2nd Bombardment Group during various periods until July 5, 1930, when

he was assigned to duty at Aberdeen Proving Ground, Md., in command of the Air Corps Detachment. In the fall of 1931, he reported at the Field Artillery School at Fort Sill, Oklahoma, for duty as Instructor. In October, 1935, when he was assigned to foreign service, Col. Reynolds assumed command of the 19th Composite Wing in the Panama Canal Department. His service in the Canal Zone was of brief duration, however, due to his physical condition, and after he was relieved from treatment at the Walter Reed General Hospital he was, on March 15, 1936, assigned to his present duty at Boston.

Colonel Reynolds was promoted to 1st Lieut., April 22, 1910; to Captain, July 1, 1916; to Major, Signal Corps (temporary) March 5, 1918; to Lieut. Colonel, Air Service, November 9, 1918 to April 13, 1920; to Major, Air Service, July 1, 1920; to Lieut. Colonel, Air Corps, January 1, 1933, and to Colonel, June 16, 1936. While a Coast Artillery officer, he graduated from the Coast Artillery School in 1913. He was given the rating of Military Aviator, April 3, 1918, for distinguished service in action.

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AIR CORPS OFFICERS OBSERVE NAVY MANEUVERS

When the aircraft of the Fleet Air Base, Luke Field, took off on November 2nd for their annual ten-day advance base exercises in waters to the northwest of the Hawaiian Islands, Air Corps officers accompanying the flight in the capacity of observers were Major Idwal H. Edwards and Lieuts. Chester P. Gilger and John G. Fowler. Major Edwards was to note naval methods of operation, supply and tactics, while Lieuts. Gilger and Fowler were to report respectively on communications and navigational methods employed.

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MILITARY COMPETITIONS IN HAWAII

All organizations of the 5th Composite Group, Luke Field, T.H., were busily engaged in preparation for the Department Military Competitions, scheduled to commence on Monday, November 9th. The Group was to be represented in the following events: Pistol Firing; Recruit Drill; Personal Appearance and Equipment (two events); Tire Changing; Trouble Shooting and Appearance events for Group Transportation; Tent Pitching Competition; and three Air Corps events, consisting of High Altitude Bombing, Accuracy Landing Event and Reconnaissance Patrol Mission.

The 5th Composite Group was slated to compete specifically with the 18th Pursuit Group at Wheeler Field, however, in most of the events other than Air events. The representatives were to be judged in company with the entrants from all regiments located in the Hawaiian Department and there was a feeling of confidence in the Group that it would make a good showing.

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20TH PURSUIT GROUP MANEUVERS IN TEXAS

By the News Letter Correspondent

The 79th Pursuit Squadron, Barksdale Field, La., left their home station for Houston, Texas, on the morning of October 13th, to participate in maneuvers for the 20th Pursuit Group. En route to our Houston base, we joined the other two squadrons of the Group for rendezvous over Liberty, Texas, and a few minutes formation to protect the landing of the 77th Pursuit Squadron at Beaumont, Texas. Arriving at Houston, we found our mess sergeant and his crew very busy preparing a most welcome dinner. In spite of the thin layer of sand that found its way into all our eating utensils, the food served during our encampment was very good.

The city of Houston was our rendezvous nearly every evening. This busy city has many of the characteristics of a northern metropolis. It seems to lack that lazy atmosphere that so many of the southern towns are noted for. One restaurant in particular seemed to hold the interest of our lovers of fine foods. The oysters a la Rockefeller and the visible coffee maker were the main attractions.

The two other squadrons of the Group were stationed at Fort Crockett and Beaumont, Texas. After one of the daily Group problems, the 79th Squadron landed for fuel at Fort Crockett. The pilots took advantage of the situation and headed for a famous sea food cafe on the water front in Galveston. The oysters a la Rockefeller were not quite up to par according to the southern connoisseurs of fine fish foods.

Our problems, as a rule, were patrol missions. Several planes from this Group were detached to act as hostile aircraft. With one or two exceptions, the "enemy" was intercepted and attacked every time.

Our final problem was an attack on the 77th Squadron base at Beaumont, Texas, with the 55th Squadron acting as the support. After the attack, we landed and went into town as guests of a local flying club. The local flyers sponsored a dance to which all pilots of the Group were invited. From all reports, the dance was a huge success. The following day, Sunday, the Group passed in review for the townspeople of Beaumont and then returned to Barksdale Field.

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Plans have been completed for a new Instrument Repair building at the Hawaiian Air Depot, Luke Field, and it is expected construction will start in a short time.

V-7162, A.C.

TRANSPORTING WIRE FENCING BY AIR

Continuing its cooperation with local government authorities in such activities as sowing seed, etc., the 5th Composite Group, Luke Field, T.H., assisted the local forestry service in an experiment to determine the practicability of transporting and dropping a quantity of 100-pound rolls of wire at designated spots on the slopes of Mauna Loa, Hawaii.

It was the desire of the Forestry Department to build a long fence high on the southeast side of Mauna Loa to prevent encorachment of wild sheep and goats into the ranch lands below. Due to the dense undergrowth and rugged terrain, the problem of transporting the large quantity of wire and fence posts involved considerable difficulties. It was thought that a great saving of time and labor could be effected if the materials could be dropped from the air.

Accordingly, on October 19th, Lieut. D.N. Crickette, accompanied by 1st Sergeant L.N. Johnson, Sergeant James Asher and Private Albion Howe, flying in a Keystone Bomber and escorted by Lieut. R.W. Warren, who was accompanied by Mr. Tillett, of the Forestry Department, Corporal C.W. Cunningham and Private R.H. Platt, flying in an OA-3 Amphibian, proceeded to Hilo, Hawaii. Here the Keystone was loaded with six 100-pound coils of wire. Taking off early the following morning, in order to take advantage of good flying conditions, the Bomber dropped the wire on points marked by crosses of cheese cloth laid on the ground. The mission was completed in two hours, whereas, had it been done with trucks and pack mules, the only other practical method, it would have required at least two days. Prior to the return to Luke Field, the personnel of the flight were taken by the local foresters on a sheep hunting expedition on the slopes of Mauna Loa, and a total of 49 sheep and two pigs was killed.

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RESERVE OFFICERS HONOR GENERAL SIMONDS

On November 18th, the Los Angeles Chapter of the Reserve Officers' Association held a banquet in honor of the Commanding General of the 9th Corps Area, Major General George S. Simonds. The 479th Squadron (Reserve) was well represented at the banquet, Captain Pardoe Martin, Air Corps, Unit Instructor, heading the list.

"It was our first opportunity to meet the General, as he only recently took over command of the Corps Area," says the scribe for the 479th Pursuit Squadron, and he adds,- "First impression would indicate 'We'd like to see more of the General.'"

REPRESENTATIVE HILL VISITS KELLY FIELD

Representative Lister Hill, of Alabama, who is Chairman of the House Military Affairs Committee, conducted a tour of inspection of the Air Corps Advanced Flying School, Kelly Field, Texas, on November 15th.

With Mr. Hill were the following members of the party who are accompanying him on his extensive inspection of Army posts, viz: Colonel Adna R. Chaffee, General Staff; Colonel Shepler W. Fitz Gerald, General Staff; Major W.D. Persons, Office of Assistant Secretary of War; Lieut. Colonel W. O. Ryan, Air Corps, pilot, and Captain John W. Persons, co-pilot of the C-34 airplane the party is utilizing as the vehicle of transportation.

Brigadier General James E. Chaney, Commanding General of the Air Corps Training Center, accompanied the party from Randolph Field, where they had arrived on November 14th. They were met at Randolph Field by Major General Breese and Congressman Maury Maverick, in addition to a number of officers of the post. Colonel Arnold N. Krogstad joined the party when they arrived at Kelly Field.

Representative Hill was most interested in the housing needs of the local army posts, and during his stay in San Antonio he also inspected Fort Sam Houston and the San Antonio Air Depot, Duncan Field, in addition to Kelly and Randolph Fields.

The party departed from Randolph Field on November 16th for El Paso, Texas, the fifth stop on Mr. Hill's itinerary, given below:

Nov. 12 - Leave Washington for Maxwell Field, Montgomery, Ala.

Nov. 13 - Inspection of Field 8-9 a.m. Leave Maxwell Field 9:30 for Barksdale; lunch and inspection of field. Leave 2:30 p.m. for Fort Sill. Overnight.

Nov. 14 - Inspection of Fort Sill and Post Field, lunch. Leave 2:00 p.m. for Randolph Field, San Antonio. Overnight.

Nov. 15 - To Corps Area Headquarters by 9:00 a.m. Inspection of Fort Sam Houston; lunch, then to Kelly Field, Duncan Field, and back to Randolph Field. Overnight.

Nov. 16 - To Fort Bliss; lunch and inspection of Fort Bliss and Beaumont General Hospital. Overnight.

Nov. 17 - To March Field; inspection of March Field and Muroc Lake area by air and into Clover Field.

Nov. 18 - Los Angeles area (Fort MacArthur).

Nov. 19 - To San Francisco (Hamilton Field and Sacramento).

Nov. 20 - Corps Area (Presidio).

Nov. 21 - To Salt Lake (Fort Douglas) overnight.

Nov. 22 - To Denver (Fitzsimons General

Hospital and new Air Corps site). Overnight.

Nov. 24 - To Scott Field - inspection; to Chanute Field, lunch and inspection; and to Chicago, overnight.

Nov. 25 - Inspection of Fort Sheridan and after lunch to Fort Knox, overnight.

Nov. 26 - Inspection and to Wright Field - lunch Patterson Field, Overnight.

Nov. 27 - Fort Bragg and Maxwell, overnight.

Nov. 28 - Washington.

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The monthly Control Area supply and engineering conference and luncheon at the San Antonio Air Depot, Duncan Field, Texas, held on November 10th, was attended by seven officers of various Air Corps stations in the area and the officers of the Air Depot. Stormy weather at the time prevented a larger number of officers from flying in to attend.

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SOME FAST TRANSPORT PLANE

Colonel H.B. Clagett, Commanding Officer, Selfridge Field, Mich., and Captain Harlan T. McCormick, of that station, left recently for March Field, Calif., to accept one of the new Douglas C-33 airplanes.

"Selfridge Field has been in need of a faster transport plane for some time," says the News Letter Correspondent, and he then adds: "If the reports on the new Douglas are correct, it will be possible for the maintenance crews to service the planes before departure, board the transport, and arrive in time to take care of the combat planes as they arrive.

Sergeants Brock and Schaeffer, who will be assigned to the ship, are on their way to Santa Monica to receive instructions as to the upkeep and repair of the new ship."

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55th Pursuit at Shushan Airport

(Continued from Page 10)

engaged in ground gunnery training, with early morning and late afternoon firing featuring the program. Six pilots to date have completed record firing with the gratifying result of a temporary squadron average of over 800.

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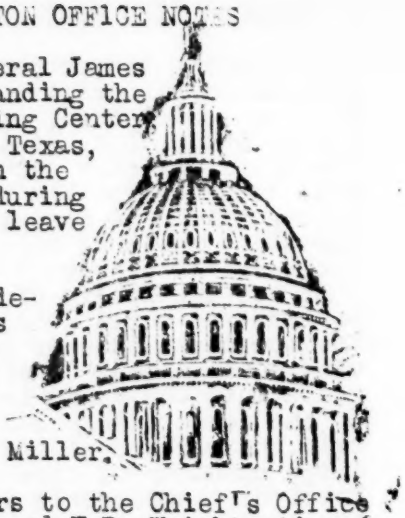
Recent visitors from Langley Field to Selfridge Field were Colonels Follett Bradley, Carl Spatz and Captain R.P. Williams. The last-named officer, who is the Meteorological Officer of the 2nd Wing, made a preliminary inspection of the Selfridge Field meteorological station. This station is to be expanded and, as soon as the enlisted personnel arefully trained, 24-hour service will be available.

WASHINGTON OFFICE NOTES



Brigadier General James E. Chaney, Commanding the Air Corps Training Center, Randolph Field, Texas, was a visitor in the Chief's Office during the course of a leave of absence.

Officers who departed on leaves of absence were Lieut. Colonel H.C. Davidson, Executive, and Major Lester T. Miller.

Recent visitors to the Chief's Office were Lieut. Colonel W.B. Wright, Air Officer, 5th Corps Area, Columbus, Ohio; Captain O.P. Weyland from the Advanced Flying School, Kelly Field, Texas; Captain Randolph Williams from Langley Field; Captain Robert W. Douglass, Jr., student at the Command and General Staff School, Fort Leavenworth, Kansas; Captain Claire Stroh, Instructor National Guard, Little Rock, Ark.; and 1st Lieut. Frederick R. Dent from Wright Field.

Officers returning recently from navigation flights were Major Alfred W. Marriner from Mitchel Field; Major James A. Mollison from Newark, N.J.

Major Lowell H. Smith, Chief of the Inspection Division, returned November 16th from leave of absence.

Lieut. Colonel William E. Lynd, Captains A.H. Foster and Donald F. Stace recently returned from temporary duty at Wright Field, Ohio.

Captain Robert V. Laughlin returned from temporary duty in New York.

Major William B. Souza returned from Mitchel Field, N.Y., following a ferrying mission. He ferried a new O-46 airplane from the Douglas factory at Santa Monica, Calif.

Major Malcolm C. Grow, Chief Flight Surgeon, returned November 17th from West Point, N.Y.

Captain Mervin E. Gross departed on November 23rd for Wright Field.

Lieut. Colonel Robert L. Walsh, Chief of the Reserve Division, returned November 15th from leave of absence.

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Eleven Air Reserve second lieutenants, now stationed at Hamilton Field, are under orders to sail about December 19th for duty with an Air Corps tactical unit in the Panama Canal Department.

FOREIGN OPINIONS ON PRESENT DAY AVIATION

In the first international issue of "ALA D'ITALIA" published in October, 1936, there are given the opinions of eminent men whose labor and genius contribute daily to the progress of aviation. Some of these opinions are quoted below, as follows:

ROUMANIAN UNDER SECRETARY, MR. CARANFIL

Would you like to know my opinion on some outstanding problems of today? Fighters must be single-engined and single-seater or twin-engined and multi-seaters? Which is best, heavy or light bomber? I consider that as regards war material the problems are many and complex and can be solved only through experience and by taking into account special conditions peculiar to each country and each military force.

The flying equipment of an Air Force depends on the strategical problems springing from the performance of the aircraft of the probable enemy; from the nature of the country that shall have to be crossed, from the ground organization that one can dispose of, from the possibilities afforded by the national industries and by its potentiality in war time. In recent years, thanks to research on applied aerodynamics, the rosiest previsions have been surpassed. It is not to be forgotten that in aviation, as in every other field of technics, the last word must be said by practical experience.

Let us then follow with interest the peculiarities and improvements of prototypes but let us also bear in mind that the best aircraft shall always be that which has been thoroughly tested in flight and is in the hand of crews that know to make the best use of it.

CHIEF ENGINEER G. GALASSO,
"Industrie Aeronautiche Romeo," Naples.

A definite statement as far as air and liquid-cooled engines are concerned is not possible. Either type had its periods of supremacy in the past. Actually the use of one or the other is still a question of which particular problems the plane has to solve. Anyhow it appears to me that owing to the heavy demand for higher speed, the liquid-cooled engine is going to come into its own again.

Wooden and mixed constructions have obviously to leave the aeronautical field too in favor of all-metal constructions. In those countries where metal's raw materials are largely available and powerful industries are more advanced this is already a well accomplished fact. Other countries will follow gradually as soon as the metal's industry and the aeronautical constructors get fully equipped. Aluminum and its alloys appears to have the best chances of success. Stainless steel is too heavy and expensive, magnesium has worse mechanical characteristics and does not stand corrosion as well. I think therefore their use will be limited to special component parts.

With regards to the monoplane-biplane controversy, it appears now to be certain that biplanes are going to disappear. Low wing monoplanes will hold a strong supremacy.

COMMODORE MANUEL A. FRANKE M.,
Chief, General Staff, Chilian Flying Corps.

What more characteristic developments can be expected for the Military Corps? The military aviation with all the characteristics reached up to date, namely, load capacity, firing and falling armament, speed, material used in constructions, regularity and power of the engines, instruments of navigation, etc., and with the inevitable future developments bound to the interest of technical men, will become the most important arm of the military forces of a nation. According to my opinion the most important improvements will come to us in the field of load capacity and flying range.

In regard to the problem of fighters whose tendencies now seem to be summed up in the three following solutions:

1. Single-engined, single-seater very fast and light with racing engine and light armament;
2. High speed twin-engined craft, with two three-seaters with average armament;
3. Heavy twin-engined craft with heavy and plentiful armament.

I must vote for the second solution with full confidence. Why? Because today as it is, the difference of speed between the most modern craft of that type and the fighters is very little, and if the chief characteristic of mobility remains for the latter, on the other hand and in regard to the power of fire, the scale turns markedly to the part of the twin-engined. It is true that fighters are now being armed with small 20 millimeter guns and no longer with machine-guns alone, to make their attacks more efficient in this way. But also the twin-engined craft can carry small guns, and if on one hand they have an aim of lesser importance (the fighter), on the other hand they have a distinct advantage of greater fire power. The question deserves the greatest theoretical and practical discussion. Personally and on the basis of facts, I am sure that the double engines are the best solution, however.

It is difficult to judge if the war efficiency of the large twin or three engined big bombers large formations is better than that of the light single-engined craft separately at the aim. That requires a discussion either too ample or too limited. For the time being I will be satisfied with the latter to say what is most essential. A modern light bomber can carry 500 kg. of shells at a speed varying from 380 to 420 km. p.h.; a modern heavy airplane from 1500 to 2000 kg. at a speed of 280 or 300 at the most. It will be seen that there is a considerable difference in weight and speed. Now the war efficiency of these two types of craft, besides what they have given, depends on many other elements, some of which are difficult to estimate, such as weather, the vastity of the aims, the geographical configuration of the zones, the state of the operations, the situation of the material in general, etc., etc. Probably a clear distinction

does not exist, and both types can have their highest efficiency for different kinds of use.

PROSPERO GIANFERRARI
Chairman, Assn. of Italian Aircraft Constructors

Shall I express my opinion upon the developments of the struggle between the two types of engines which are contending each other the aeronautical supremacy? The task is a difficult and ungrateful one, but today more than ever these subjects must be clearly considered and backed by experience. Air cooled engines and liquid cooled engines will continue in contending the preference of high military chiefs, of aircraft designers and airlines' operators. But it appears certain that the watercooled engine is actually enjoying a period of particularly good achievements and whilst 1936, a very interesting year for aviation, is nearing the end, we have to agree that it is also going to suppress and perhaps to reverse the numerical supremacy of its opponents, at least as far as great powers' units are concerned.

What are the reasons? There are many. Above all the high altitude flying problems which are getting day after day more impelling and which Italy is actually largely experimenting. For high altitude exigencies the water cooled engine is better suited and gives better guarantees of good running. The lowering of temperature does not compensate to the cooling effects the diminution of density and consequently the diminution in weight of the air which gets in contact with the surfaces to be cooled. To stand this drawback, water cooled engines can be fitted with wider variable surface radiator. Whilst nothing of that kind has yet been developed for air cooled engines. Moreover, with engines of the latter type it is not possible to place the carburetors after the supercharger and so avoid the increase of admission temperature which means a diminution in weight of the air-gas mixture getting inside the cylinders. It is also very clear that water cooled engines can more easily support the overload imposed by heavy take off, by take off from torrid zones, and when multi-engined machines are concerned, by flying with one or more engines dead.

A complete examination of these problems would be too long, but in my opinion the above mentioned remarks when added to the important factor of the ever increasing speed exigencies, explain well enough the reasons of the particular preference which, during 1936, high performance prototypes have proved in behalf of liquid cooled engines. There is also to be considered that the Americans, who were highly responsible for the last ten years predomination of radial engines, have just this year started a careful study of the best European water-cooled engines in order to rebuild their experience on the subject. It will be wise to pay the best attention on every further development.

F.S. SIGRIST, Director Manager of the Hawker Aircraft, Ltd., Kingston-on-Thames, Eng.

I think for the great majority of aircraft construction will be all-metal or metal with fabric covering. There will be a scope, for a few years at least, for the light type of private owner machine in a combination of wood metallic construction. Undoubtedly there will be big development in the increasing use of stainless steel and light alloys, particularly the magnesium light alloy. Each has advantages and each has its adherents in the constructional field.

The future development will really, I think, depend upon the national point of view and the designing firms concerned. In some countries where the national production of light alloys is predominant that type of material will be used. In other countries where the basic industry is steel the stainless material will naturally receive first consideration. All circumstances being equal, there is no objection to a mixed construction, providing the necessary precautions against corrosion by electrolytic action are taken.

I believe that with the increase in engine power and the consequent increase in aircraft performance that the monoplane will be the prevailing type of machine of the future and that the production of the biplane, except perhaps for special purposes, will rapidly decrease.

REGINALD J. MITCHELL, Director and Chief Designer at The Supermarine Aviation Works

It is always very difficult to prophesy what developments will take place in the future, particularly in connection with aviation. Greater development depend on so many items other than the purely technical aspect. If designers could be given a free hand to carry out their own ideas, and were not handicapped by national and commercial considerations I feel sure that progress would be very much more rapid.

As the speed radio of the most efficient airplane of today is about 6-1, there is a great deal progress to be made before this is increased to 10-1. In fact, I can not foresee at present how this is to be done, as it will mean putting up the speed of the airplanes to at least 700-800 miles per hour. This may be practicable in several years' time as a purely stunt performance, but I think it will be very many years before it will be attained on an airplane which can be used for practical purposes.

Reaching a 1:3 ratio between empty and full load weights is to my mind a much simpler proposition. The use of heavier wing loadings with landing flaps and catapulting devices together with more efficient methods of construction and improvement in material will soon bring this ratio well within reach.

I am a very firm believer in composite methods of construction and I think composite construction will come into its own again very rapidly in place of the all-metal construction which is at present very popular. A composite construction of wood and metal enables a design to be got out much quicker and will provide a very much cheaper and quicker production. I am of the opinion that in the case of national emergency, when it is essential to turn out aircraft with great speed and as cheaply as possible that composite construction will be universally employed. Finally I am of the opinion that the liquid-cooled engine will always give a little better speed in very fast aircraft.